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Unsettling Times: Living with the Changing Horizons of the Peruvian Andes

Mattias Borg Rasmussen

Abstract

As in many other parts of the Peruvian Andes, the peasants of rural Recuay report receding glaciers, altered patterns of precipitation, and disappearing species of plants and wildlife among the many things that may unsettle the everyday. Susan Whyte's concept of uncertainty highlights the fact that climate change emerges in different ways in particular situations. It informs water politics and local lives but is not a priori the most important part of the story. Rather than adapting to climate change, people adapt climate change to their social worlds.

Así como en varias partes de los Andes peruanos, los campesinos del Recuay rural dan parte de glaciares en retroceso, padrones de precipitación alterados, y la desaparición de especies de plantas y fauna silvestre entre las numerosas cosas que puedan perturbar lo cotidiano. El concepto de Susan Whyte de la incertidumbre acentúa el hecho de que el cambio climático se manifiesta de distintas maneras en situaciones particulares. Informa políticas sobre el agua y las vidas locales pero no es a priori la parte más importante de la historia. En vez de adaptarse al cambio climático, la gente adapta el cambio climático a sus mundos sociales.

Keywords

Climate change, Peru, Rural society, Uncertainty, Adaptation

"Here climate change is notorious," Don Mariano, a talkative, dark-skinned man with greying curly hair, told me when we first met on the balcony of the Recuay Municipality in the highlands of Ancash. Then he began to explain the difficulties of getting water to the fields—obstacles that had to do with anything but climate change: state and community neglect, informal users and uses, leaks and clogs. Water is always entangled in both environment and society. And then he returned to the white peaks that we could see on the horizon, some of them now darkened. From Recuay people can easily observe the retreat of the glaciers. In contrast to the situation in many other places, where global climate change is still somewhat hypothetical, the evidence of the

retreat is hard to dispute. People have firsthand experience of changes that are already happening and their ramifications, which go beyond environmental change to enter the realm of politics. While climate change may be global, its roots and impacts are always localized. Recent studies have argued that analysis of climate change must move beyond adaptation frameworks in which human agency is predicated by climate change and strike a balance between climate determinism and the view that climate is not necessarily the factor shaping human society and does not operate unfettered (Hulme, 2011; Nielsen and Sejersen, 2013; Orlove, 2009). Crate and Nuttall (2009: 11) point to climate change as a threat multiplier, indicating that climate change may enhance a sense of uncertainty and urgency. Kirsten Hastrup (2013: 277) argues that global climate change “introduces new disjunctions and inequities” while scientific and vernacular knowledge about the environment is being “destabilized.” These entanglements of the global and the local call for analyses that capture how people “continue to live and act in particular places” even as they become increasingly unsettled.

In this article I will examine critically the manner in which we conceptualize and analyze the participation of climate change in the social and political worlds. I argue that climate change should be treated not as the sole object of analysis but as part of a social world. Rather than seeing changing winds, temperatures, and precipitation as external, I suggest regarding them as integral to human experience. Issues of water availability go well beyond the quantity of water, and consequently climate change always stands in relation to other phenomena that unsettle daily life, entering social worlds in many different ways. This article therefore does three things: methodologically, it engages critically with the dominant body of literature on climate change; analytically, it suggests a focus on uncertainty (Whyte, 1997; 2009) as a vocabulary that highlights the way people deal with a world that appears to be changing in shape; empirically, it scrutinizes a particular case in highland Peru. Through these three steps, I suggest an examination of the way climate change is being adapted by people to their own inhabited worlds rather than the way people are adapting to climate change.

The Atoq Huacanca

The material presented in this article is based on 12 months of fieldwork in 2010 and 2011 in the area around Recuay, a small highland town in Ancash, in the foothills of Peru’s Cordillera Blanca. During the fieldwork I followed the contentious politics that emerged in and around different flows of water traversing the rugged Andean terrain just east of Recuay, starting in the small village of Huancapampa, where people live in mixed economies of agriculture, herding, and occasional, often unskilled labor (see Rasmussen, 2012). By following the water that runs in irrigation channels and rivers through participant observation, interviews, GIS analysis, and survey and archival work, I was able to analyze the many factors that create or inhibit flows of water, of which the amount of water is only one.

Descending from the white peaks to the plentiful waters of the Santa River, the Atoq Huacanca River cuts its way through the high-altitude grasslands known as the puna. The first part of the Atoq Huacanca is winding and mostly the territory of vicuñas, pumas, and condors. This territory is under the control of the state because it is part of the Parque Nacional Huascarán, but the neighboring peasant communities of Cátac and Cordillera Blanca enjoy the usufruct of the area, its residents usually going there with their herds in the dry months. Carving itself deep into the terrain, it is only when it reaches Huancapampa, located at the intersection between the rivers, that the waters of Atoq Huacanca are easily accessible from human settlements. But even here, little water is put to use. Women wash their clothes in small ponds dammed with carefully positioned stones. A small channel brings water from the Atoq Huacanca to the gardens of a few houses. Earlier people made more use of the waters of both rivers for bathing and washing. Human consumption has mostly been restricted to the water sources in the flatlands between Huancapampa and the confluence of the two rivers that has now been ravaged by their combined force. Now water is potable, brought to the village in pipes from a nearby spring.

It follows from that ravage that water is not just a life-giving substance or a matter of development. The major concern about the river in Huancapampa was that it was a destroyer, a force to be tamed (for further details, see [Rasmussen, 2015](#): 30–32). Those destructive powers were seen as having been intensified by the villagers. More concretely, Iván, the mayor, told me that the Atoq Huacanca was like a dry river—low most of the time but then suddenly flowing violently, displacing rocks and eating away its banks. His mother-in-law, Doña Elena, was fearful for her house situated on what is now the brink of the river; when it rains heavily—as it occasionally does—she feels her house moving, and she has decided to move to the neighboring one.

Doña Elena grew up “like small animals,” wandering around barefoot selling small items in Recuay while her father worked on a hacienda in the Cordillera Negra. She was a skillful trader and is now a shopowner providing villagers with hard liquor and other necessities. Because of the encroachment of the river, she now lives in the part of her house where her shop is located. “I don’t know why these rivers have gone perverse,” she told me. “Before, previously, it wasn’t that way. It was beautiful, going slowly, never carrying any stones.” As does her son-in-law, Iván, Doña Elena emphasizes how the river has changed. Other villagers also told me that they had lost part of their land to the river. This was good land; flat, moist, and easily accessible. However, that the Atoq Huacanca can be violent is not entirely news to the villagers. The pampa that lends its name to the village was washed away along with the village chapel before anybody began to discuss climate change. But there is a different intensity to the violence of the rivers: “Before it wasn’t like that; the Santa River flowed beautifully, without moving, like that, but now even that has also turned into a rebel.” And then she added, with subtle irony, that the Saint [Santa] River was now a Devil [Diablo] River. This is a common saying, reflecting the perceived connections between changes in the social and environmental surroundings. To Elena

and Mariano, these changes and connections are part of something bigger, something that is profoundly unsettling.

Locating Climate Change

Mountain regions are often mentioned as regions that are especially susceptible to climate change. The peaks of the Cordillera Blanca are the highest in the Peruvian Andes, this being the most extensively glaciated mountain range in the tropics ([Coudrain, Francou, and Kundzewicz, 2005](#): 930; [Vuille et al., 2003](#): 78). Ninety-eight percent of Peru's available water is located east of the Andes, while it is the Pacific coast that is the demographically and economically most important region ([Vergara et al., 2007](#): 261). Mountain glaciers—natural water towers ([Bury et al., 2008](#): 323)—are highly sensitive to changes in both precipitation and temperature, and therefore they provide some of the clearest and most visible evidence of climate change ([Beniston, 2003](#): 10; [Bradley et al., 2006](#); [Vuille et al., 2003](#)). Studies of climate change in the Andes highlight the multiple stakeholders along the watersheds, each affected in a different way by the receding ice and changing precipitation and the increased danger of unstable glacial lakes ([Carey, 2005](#); [2008](#); [Coudrain, Francou, and Kundzewicz, 2005](#): 931; see also [Oliver-Smith, 1986](#)): small-scale farmers and herders, towns and cities, hydropower facilities, and large-scale irrigated estates on the coast ([Carey, 2005](#); [2008](#); [Lynch, 2012](#); [Rhoades, Zapata, and Aragundy, 2008](#); [Vergara et al., 2007](#): 261). Climate change is thus increasing the pressure on water resources in the Andes and permeating social landscapes.

The literature on the human aspects of climate change discusses resilience, vulnerability, adaptation, and, lately, adaptive capacity at length ([Berrang-Ford, Ford, and Paterson, 2011](#)). These terms have different genealogies and have grown out of different scientific communities, and to some extent they remain separate in use ([Manyena, 2006](#); [Turner, 2010](#)). “Adaptation” has been particularly dominant because of its deep institutionalization and the adaptation projects and funds that are distributed across the world. In that sense, it resembles “development.” While “resilience” and “vulnerability” are separate concepts, they overlap in their interest in “adaptive capacity”—the ability of a human group either to change or adjust its own behavior, organization, regimes of governance, etc., or to make its surroundings fit for a certain kind of human activity ([Engle, 2011](#); [Smit and Wandel, 2006](#)).

“Adaptation” and its neighboring terms seem to presuppose a certain teleology: everything that is done is done in order to fulfill a purpose—adapting to environmental change. How, then, should we characterize all the actions that are not adaptive? In its division of the world into natural and social systems, the adaptation framework engages a Western dual world struggling to capture the entanglements of economics, ecology, and culture that [Arturo Escobar \(2006\)](#) suggests are paramount for understanding engagements with the

environment. The “question of what people are adapting to” ([Nielsen and Vigh, 2012](#): 1) may therefore miss the point of how people engage the world they live in, because adaptation as an analytical tool is continually being applied only to certain kinds of change. By focusing on the figurations and configurations of an inhabited world (cf. [Ingold, 2008](#)) rather than adaptation and the distinction between social and natural systems, I intend to highlight the way people engage their world even as it appears to be changing in shape. This does not render discussions of adaptation futile, but it does decenter the concept and make it descriptive rather than analytical, thus evading the normativity that it potentially entails.

Adaptation scholars struggle to capture the dynamics of the multiple factors that, in resilience parlance, perturb—or impact—human society. [Berrang-Ford, Ford, and Paterson \(2011](#): 28) write that “adaptive activities are occurring in response to a mixture of climate change and other motivating factors.” They highlight the fact that adaptation concerns both present and anticipated conditions and find that anticipatory responses are likely to come from higher levels of government whereas households tend to be reactive in their response to climate change. This may point to “adaptive capacity,” but it could also indicate a certain scale of analysis in the studies under review. I therefore concur with the approach of [Nielsen and Vigh \(2012](#): 3) of capturing “the non-environmental factors and human subjectivity when exploring the human-climate nexus” so as to “elucidate adaptability or the way in which local actors simultaneously navigate many different uncertainties and possibilities across time and space when adapting to climate change.” But whereas they focus on adaptation, I suggest that, just as fieldworkers may be better off not talking about climate change ([Marino and Schweitzer, 2009](#)), there is methodological point in not taking climate change as the starting and end-point of the analysis. Instead of looking at the way people are adapting to climate change, I suggest a closer look at the way people are adapting climate change to their inhabited worlds.

[Orlove, Wiegandt, and Luckman \(2008\)](#) argue that the retreat of the mountain glaciers is a matter not just of melting ice but also of disruptions to livelihoods, cultural orientations, and symbolic worlds (see also [Cruikshank, 2005](#)). Thus, while the adaptation framework has been dominant in much climate change literature, studies of cultural perceptions are emerging. In the case of the Cotacachi volcano in highland Ecuador, [Rhoades, Zapata, and Aragundy \(2008\)](#) find that the disappearance of the glacier on its peak is interpreted not only as a change in a physical landscape but also in terms of a cultural landscape in which mountain deities and spirits are being upset and perhaps even uprooted. Dependence on mountain glaciers in the Andes moves beyond economics into culture. In fact, as [Dunbar and Medina \(2012](#); see also [Carey, 2010](#)) show in their analysis of the changing patterns of commercial ice extraction in the Callejón de Huaylas, cultural and economic life are hard to separate. In the case of southern Peru, [Bolin \(2009\)](#) finds that the melting of the glaciers affects cultural practices and rituals that revolve around ice and snow. Cultural practices alter as the glaciers retreat, and, as [Paerregaard \(2013\)](#) argues, in the Andes nature and culture are inextricably linked,

challenging scientific notions of cause and effect. In a critique of the adaptation framework, [Orlove \(2009\)](#) highlights that glacial retreat raises questions among the herders about the well-being of the supernatural world (see also [Postigo, 2013](#); [Postigo, Young, and Crews, 2008](#)). From the Cordillera Blanca, [Lynch \(2012\)](#) argues that climate change has very diverse effects along a shared watershed, sparking questions of competition and rights among very different communities. The challenges presented to the Andeans cannot be reduced to pressure on ecosystems and livelihoods that can be targeted by development projects. Studies of climate change in the Andes highlight that environmental change is deeply implicated in the enmeshment of culture, politics, and economy (cf. [Crate, 2011](#)). As the topographical and symbolic horizons are changing, the matters at stake are being challenged in new ways.

Uncertainty: Challenging the Matters at Stake

A phenomenon such as a melting glacier is uncertain only because it enters social worlds in particular ways. Uncertainty is based on subjective perception. Following [Whyte \(1997](#); also 2009), I regard uncertainty not as a constraint but as a condition of human existence that shapes human agency and that may be more or less relevant depending on the situation. This is a different perspective from the one that has emerged from economic anthropology, which focuses on uncertainty as related to decision making (see [Chibnik, 2011](#)). Growing out of the pragmatism of [Dewey \(1929\)](#), this Whytean idea of uncertainty tackles the relationship between knowledge and action—how we make sense of the world and what we can do about the perils that it presents to us.

In this context, uncertainty therefore concerns the particular configurations of knowledge about the environment, the seasonality of rain and sun, soil quality, the marketability of produce, and social relations and support from nongovernmental organizations and the government. Thus, when people say that the toads are disappearing, the birds are being replaced by a different kind, and the ants do not climb the wooden poles as they used to, they are telling a story of a changing environment in which the signs of the weather to come are no longer the same (see [Swenson et al., 2012](#)). As [Enrique Mayer \(2002\)](#) among others has repeatedly stressed, diversification is the key to the continuing well-being of the household and an important way of dealing with the contingencies of rural life. The ways in which climate change enters the household economy are, however, as diverse as the household's activities. The complexity of assessing the impacts of climate change is apparent in the narrative of Noimy, a young mother of two living in the upper barrio of Huancapampa ([Rasmussen, 2015](#): 170):

[The climate] has changed a lot. Before, when it rained it was warmer; we did not feel too much cold. Now, when it rains it is so cold, it is like being inside a freezer. And when it is hot, the same; it is heat

that burns. The climate has changed a lot, because before it was not like that. It rained; it was more embracing, beautiful. . . . Where it affects us most is the sowing. You can't sow well anymore because the rain is too late or too early, or it rains too much. And when you live on the puna it is the same: too much cold. And the sheep die. It doesn't produce anymore. At night, frosts fall and the animals die. There is no pasture, the cows don't give any milk, and the calves may die. So it affects us both in the sowing and the animals. And it is not just that: with the health, with so much cold the children get sick. Or it is too cold, you give them a bath, they get bronchitis.

[The glaciers] are melting too much, because before, when you went to the Cordillera Blanca, it was so beautiful because it was all the way down, it had a lot [of snow]. Now you see the cordillera, and it hardly has any at the peaks. The lower parts don't have anything anymore. There are some that fall because they are melting with too much heat. And apart from that, when it rains: before, when it rained snow fell in the puna, and it built up. Now, when it rains only water falls, and, even worse, the water is melting away the ice. So there is not much snow anymore.

It is a gloomy picture that Noimy paints. The world is, quite literally, falling apart: the very sources of livelihood are being eroded by changes in the behavior of meteorological phenomena. Where on other occasions she would be concerned with the particularities of one season, here Noimy talks about general trends that are univocal. She sees herself and her kin as at the mercy of an environment that is increasingly failing to provide them with a sustainable source of income and food as well as deteriorating aesthetically. The peasants of Recuay are not oblivious to the beauty of the Cordillera Blanca and feel a deep emotional connection to the place that has given them life. However, it is as if the contingencies of the environment were intensifying; the matters at stake are being challenged in new ways.

While uncertainty basically concerns the matters at stake in the everyday, I follow [Whyte \(2009\)](#) in distinguishing between uncertainty related to insecurity and uncertainty related to contingency. Uncertainty is unevenly distributed, and so are the means for dealing with it. Because the villagers live in precarious conditions, they are more susceptible to change. If insecurity is, as Whyte argues, a social condition that refers to the lack of protection from danger as well as a weakness in social arrangements, then efforts to make things secure are a matter of the politics of resources for action. [Jenkins, Jessen, and Steffen \(2005\)](#) have spoken of the political economy of uncertainty, through which uncertainty enters the realm of politics because the distribution of uncertainty is related to the social positions of the individuals involved.

Uncertainty as contingency is closely related to vulnerability. Vulnerability studies (e.g., [Bury et al., 2008](#), in C  tat  ) highlight that poverty and water scarcity, for example, expose certain groups of people to certain kinds of risk. Concerned with exposure, sensitivity, and adaptive capacity, vulnerability is valuable as a baseline, but

it fails to capture the way individuals deal with the matters at stake through politics, narratives, and social relations. As do vulnerability studies, studies of uncertainty focus on the distribution of disadvantages, but in contrast to those studies they focus on subjectivity and human agency. Uncertainty invokes agency. Things become uncertain only when they contain the possibility that something could be different.

Enmeshment in politics and local economies makes it no easy task to make things different; the unequal distribution of the means of dealing with difficulties affects the distribution of uncertainty. The river has become wild and unruly, threatening to wash away Doña Elena's house just as the Santa River once took away the old village church. At one point, her preoccupation grows out of a change in the environment—the morphology of the river—that can at least in part be ascribed to a changing climate, as well as to the tectonic movements that led to the landslides and dislocations of the 1970 earthquake. That is beyond village politics. But Recuay has set up huge stone walls as barriers to protect the town from the Santa River turned devil, and Doña Elena dreams of barriers in the Atoq Huacanca that could protect its inhabited banks. That, in contrast, is very much about village politics and the relationship to the provincial government in Recuay.

While this may seem like a classic adaptation project in which people invoke their own vulnerabilities in order to achieve funding, it is important that Doña Elena does not perceive this as an option. Terms such as “vulnerability” and “adaptation” have yet to take root and achieve a social life on the banks of the Atoq Huacanca. The insecurity of the encroachment of the river gives rise to uncertainty, but it is informed by the limited resources for action. Doña Elena cannot herself take a shovel and modify the course of the river; she needs to undertake coordinated action that ultimately mobilizes the resources of the municipality. Currently, the greatest risk with regard to climate change in the Cordillera Blanca is perceived to be glacial lake outburst floods (see [Carey, 2005; 2008; 2010](#)). The efforts to secure Lake Palcacocha above Huaraz, now more voluminous than it was on that devastating day in 1941 when the lake burst and buried the city in mud, ice, and debris, are, strictly speaking, a matter of engineering—or adaptation, as it were—but importantly also a way of diminishing uncertainty among the inhabitants of the regional capital. Thus part of dealing with uncertainty is not making certain but making secure. But whereas fragile glacial lakes are a matter of national politics, the chances that some institution will take an interest in securing the northern limits of Huancapampa, where Doña Elena fears for her house, seem slim.

Analytically, [Dewey \(1929\)](#) makes a distinction between insurance and assurance that aptly captures the need not only to make secure what is threatened but also to make it fit into one's understanding of the world. Thus the idea of uncertainty seeks to capture the interplay between action and an inherently partial knowledge of the world. While all practical action involves elements of uncertainty as the outcomes are held in suspense, in this framework attention is directed toward attempts to make secure and make certain. Doña Elena thus faces

a twin challenge: dealing not only with unresponsive local government and the enmeshment of knowledge in interests, aspirations, and expectations but also with a world that is changing direction. The horizons of the Andes are shifting not only physically but also figuratively. New orientations in time and space are emerging.

Climate Change and Andean Lives

[Whyte \(2009: 216\)](#) writes, “If the differentiation of [insecurity and contingency] is to be more than a pedantic exercise, we must put them to work by putting them back together again, showing that contingency may feed into insecurity, and showing how the insecurity of some may affect the contingent situation of others.” To understand the relationship between these uncertainties, we need to grasp “the interplay of states of mind, social conditions for securing life, and contingent existences.” The analysis of uncertainties shows that not only is uncertainty produced by singular processes that contribute to a certain amount of uncertainty but also these may stand in relation to each other in a kind of symbiosis. Thus, the uncertainty created by climate change may be exacerbated by cattle rustling because the latter stands as proof of the inability of the government to deal with the issues that are important to Huancapampinos, such as building a stone wall.

Looking at the ways in which people talk about their everyday and the matters at stake, we find a number of “phenomena that result in uncertainty” ([Haram and Yamba, 2009](#)): changes in the physical surroundings, the melting glaciers, the changing rainfall, the unruly rivers, lightning that may kill a cow, a sheep, or a person, hail and frosts that destroy the crops, and soil that does not produce as it used to. Harvests may fail, a job opportunity may or may not come, the price of sugar may rise; one may lose an animal, purchase fertilizer for the fields, or need to buy or sell potatoes in the market. Furthermore, cattle and even crops may be stolen, dogs may block one’s way, and burglars may empty houses and set property and people on fire. To this one can add the memory of the Shining Path, untrustworthy authorities on all political levels, and God’s wrath and the end of the world. Thus, the politics of uncertainty discursively places a phenomenon such as climate change in different contexts: stories that see climate change either as a result of one’s own behavior, big capitalism, or the wrath of God are very different theorizations of the causalities of the world. Different understandings of how the world is put together point toward different courses of action and fields of contestation.

Religious celebrations such as that of the Virgen de las Mercedes in the neighboring village of Poccrac or San Bartolomé in the village of Ocopampa just upslope from Huancapampa are held in late August or September, and there is a connection between the timing of these and the seasonal variability of climate and the agricultural cycle. The religious celebrations thus also serve as events in which the saints and ultimately the Lord Jesus and God are asked to provide good rain for the coming season. Whether this will happen depends on how God has assessed the action of humans: he is very much a father who can both reward and punish. In Huancapampa,

Doña Valeria, who travels the area as a midwife and a healer, tells me that hailstorms have become more frequent and this is called “climate change.” This is the way she sees these changes:

Changes? We will have to wait for the goodwill of the Lord. We have to wait. What can we do? The wrath of the Lord. We will have to ask of the Lord that it stop. We will just have to pray. . . . His will it must be. Whenever heavy rain falls, it is the same. He is not like a human being, we can't say anything, so we ask of the Lord . . . “Why is he punishing us that way?” . . . Rather, he bears with us. . . . So much death, everywhere, all over the world. . . . Poor him, how he must be . . . because of the things we do wrong, because of the things we turn bitter. . . . So many people in Lima killing each other, or elsewhere, killing each other. Killing, more killing, how people die, like sheep. He bears everything.

In this version of the situation, the Lord plays a central part. He is the one who can make the rain come or deny it to people. Knowledge about the weather is tightly connected to particular theologies in which the Almighty adjusts the conditions of the world to the level of compliance he observes among his people. In Doña Valeria's view, the world is full of badly behaved people who do not live according to the values that her heavenly father has prescribed. The weather conditions are thus connected to the moral levels in society, and the climatic changes are a symptom of far larger things gone astray. Although she expresses her concern for the well-being of the world, she finds comfort in the knowledge that she is doing the right thing. But the world as we know it seems to be coming to an end.

This is, of course, a particularly Protestant version of climate change. However, it points toward Whyte's observation that people may couch assertions in religious parlance: praying for rain is one way to assume agency, although the final decision as to whether it rains or not—and therefore whether the harvest will be good or bad—is in the hands of God. The fields can be treated according to the amount of water they receive, and the quality of the harvest is therefore dependent not only on the rain but also on the skills of the agriculturalist and the organization of labor. Especially among those with Evangelical affiliations, the environmental change alongside other signs in the physical and human surroundings is evidence of what is to come. In this, assertions about the course of history are ways of reducing a certain kind of uncertainty about the contingencies of life.

When Doña Valeria talks about the suffering of the Lord because of the morally dubious people around the world, a causal relationship is established and agency is ascribed to certain actors. Don Mariano would often say, “We are just passengers of the world.” Similarly, Don Francisco, an old man and faithful Evangelical from Poccrac, said, “The world is moving forward.” This somewhat fatalistic approach to the ways of the world does not eliminate uncertainty, but it confines it to certain spaces.

Doña Valeria expanded on the future that is beyond one's own being in the world:

Yes, how will we be? For living, how will we be? Now I say, sometimes people know, they talk, that there will be no rain, that this will not be here anymore. They say that they will not give us our money, how will we be? When they say that, I become very worried; especially, [I worry] a lot for my grandchildren. . . . We can die now, but the grandchildren are those who will—the children suffer.

Addressing the question of the future availability of water, she is no longer using religious parlance but expressing earthly concerns for the well-being of the younger generations. She has no certainty as to what will happen, but her own observations and sources such as the radio, state campaigns, and NGOs working in Huancapampa indicate that water will be scarce and someday there might not be enough of it.

As to the future, Don Seferino from Ocopampa predicted,

Probably right now [the melting ice] does not affect us, but with time there will be no water. . . . Here in these small rivers it is mostly meltwater. . . . With time, let's say, in 20 years, there will be no more ice. And there will be no water. . . . If there is no water, we can't produce anything. There will be no animal raising, no pastures. We will have to stop with the animals. And where can we go then? If there is no water in the sierra, it will be worse on the coast.

He comes from Aija in the Cordillera Negra, an area in which there are no glaciers and people are used to irrigating on a different scale than in Ocopampa. Giving up the animals means an end to a certain way of life. On other occasions he underscored the importance of improving the water infrastructure of the area and enhancing the awareness of people who irrigate. People think and act on very different temporal and spatial scales. Migration has long been an important survival strategy of the impoverished Andes populations (see [Pærrgaard, 1997](#)), but as climate change emerges as an explanatory narrative it may well move from being a vital household strategy to (failed) adaptation, depending on the scale of analysis.

Thus, climate change becomes entangled with Andean lives in many different ways. It goes beyond mere moaning that in the past things used to be better; the world is literally changing its shape before people's eyes. After all, planting seeds and waiting for the crops has always been a vulnerable and contingent act. Uncertainty is a condition of life. The new configurations of the world that are emerging as the glaciers retreat and the new global imaginaries of climate change ([Hastrup, 2013](#)) penetrate Andean society and pose challenges to life in the high cordillera. From the talks that I have had in the Peruvian highlands I have been left with a sense of a world that it literally changing its shape before the eyes of the people living there. As the phenomenologists have taught us, however, the world acquires shape only through people's dwelling in it: landscapes are

produced through social encounters, and climate change can therefore not be thought of as a one-sided phenomenon. Discursively, vulnerability tends to place people in particular circumstances, “trapped” in poverty and “dependent” on paths. A focus on uncertainty does not deny that some lead lives under very precarious conditions but seeks to highlight the openness of human existence in a world in flux and the many different actions that people undertake on a variety of spatial and temporal scales in order to maintain a coherent world.

Conclusion: Horizons of Climate Change

Climate change in the Andes and elsewhere has been described as a threat multiplier. It permeates and infiltrates Andean society in many different ways, working on a variety of spatio-temporal scales. By pointing to configurations of uncertainty and to uncertain configurations I have attempted to add to the understanding of this process by showing that climate change becomes part of social and political life—to focus on how climate change is adapted to social worlds rather than the other way around. My focus has been on the ways in which the changes in the environment unsettle the everyday by introducing new uncertainties, thus posing a challenge to human agency.

The answers that we come up with depend on the questions that we pose. If we ask how people adapt and who are the most vulnerable, we may only see part of the picture. In the Andes there is a growing sense that the horizons are changing—not only in the physical sense, in which ice is giving way to bare rock, but also figuratively, as the future seems to be changing its shape. Be it in the apocalyptic or the fatalistic sense, new horizons require new orientations and new interpretations of the past. Related to the unknowability of the future, uncertainty is concerned with subjectivity in the sense that a phenomenon is only uncertain if it is perceived to challenge what is at stake. The world is continuously changing its shape, and people continuously engage it in various ways. It is through new configurations of uncertainties that the horizons of climate change are emerging in the everyday life of the Andes.

Postscript

In July 2013 I went to see Doña Elena in her home in Huancapampa. The potato harvest had been good, but other crops had failed. She had moved back into the house next to the Atoq Huacanca. Political alliances between Huancapampa and the municipality in Recuay had paid off, and 50 meters upstream a solid wall of stone and wire equal to those in the Santa River now protected the fragile banks supporting her house and those of other fellow Huancapampinos. In a sense she was feeling more secure about managing the threat of dislocated banks, but uncertainty was taking new shapes: the river continued to act like a dry river, rains were

as unpredictable as local government, and the horizons for action—though stabilized for a while—continued to be on the move. In July 2014 she had again abandoned the house, telling me that the position of the stone wall had intensified the erosive currents of the river. The times were unsettling indeed.

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